AUTHOR INDEX

Bao, Y. 91
Byerlee, J. D. 1

Cao, D. 219
Chen, W. 17

Dragoni, M. 63
Du, Y. 159

Fu, Y. 39

Geng, N. 71
Guang, Y. 159

Han, M. 91
He, Y. 11
Hong, H. 169
Hu, Z. 25
Huang, Y. 121

Lei, X. 131
Li, D. 17
Li, Q. 17
Li, R. 159
Li, S. 55
Lin, C. 11
Liu, C. 85
Liu, D. 207
Liu, F. 191
Liu, J. 77, 111
Liu, Y. 77
Lu, Y. 77, 111

Ma, J. 131
Ma, S. 131
Ma, Y. 33
Moore, D. E. 1

Qi, Y. 191
Qian, J. 77, 111

Rong, D. 215
Rummel, F. 99

Sabadini, R. 179
Shao, J. 39
Shi, L. 11
Springes, J. E. 199

Tan, J. 77
Tang, Y. 219
Tian, J. 143

Wang, E. 77
Wang, F. 85
Wang, S. 45
Wang, W. 149
Wang, X. 17
Wang, Y. 25, 39
Wang, Z. 45

Xu, Z. 91

Yang, X. 85

Zang, Q. 39
Zhai, Q. 199
Zhang, B. 33, 85
Zhang, L. 99
Zhang, Y. 159
Zhao, J. 77
Zheng, Y. 25
Zoback, M. D. 199

SUBJECT INDEX

Acoustic emission (AE) characteristics
  application of exponential law 121–123
  factors affecting
    focal character 125
    impurity 124–125
    lithology 123–124
    stress type 125
  triaxial stress studies 116, 118
Aftershock distribution 68
Anhui region stress field 225
Apennines, tectonic setting of 183–184
Apparent resistivity and triaxial stress 114, 115–116, 117
Argon emission and rock failure 89

b-value
  factors affecting 71–72
  variation in 72–74
Bohai Bay
  earthquake studies 217, 218
  fault studies 173
Boundary zone modelling 64
Bozhong Depression 170, 171, 176
Brittle–ductile transition studies 11–12, 46, 66
  behaviour of Shentangyu zone 40, 43–44
Brush structures 155–156
Bunt Sandstone fracture energy 104–105
Buoyancy base
  defined 160
  role in earthquake 166, 167–168

Carbon dioxide emission and rock failure 87–90
Cataclasite mineral studies 13
Cataclastic flow 87
Catastrophe theory and fault evolution 210–211
Chess-board fracture structures 151
China *see* North China Plain
Clay minerals *see* illite
Compressive structures analysed 146–147
Counting rate and stress 122, 126–128
Crack proliferation and triaxial stress 113
Creep flow 49
Creep fracture 49
Cubical dilation and stress 126–128

Danjiangkou reservoir earthquake 163
Daofu fault 131, 132
Dating techniques *see* K/Ar; Rb/Sr
Deformation
  factors affecting 46
    heat loss 143
  measurements 224
  mechanisms in microminerals
    between-mineral structures 12–14
    scale variations in structures 14–15
    within-mineral structures 12
  rate studies 173
Deviatoric stress modelling 179–183
Displacement, rate of 173
Dissipative structure theory 207–209
Drought and earthquakes 165
Ductile–brittle transition *see* brittle–ductile

Earthquake studies
  depth estimation 46
  fault stress factors 216–218
  focal mechanisms 221–223
  frequency and type 128–129
  nucleation 63
  prediction
    b-value factors 71
    fault evolution effects 211–212
    induced polarization method 83–84
  water-caused
    compared with water-induced 164–165
    conditions 160–161
    energy release model 161–164
    mechanisms 159
    prediction 165–168
    principles 160
  water-induced
    compared with water-caused 164–165
    mechanisms 159
Elastic deformation and triaxial stress 113
Elastic wave and triaxial stress 114
Energy accumulating belt
  defined 160
  role in earthquake 165, 167
Energy carrier
  defined 160
  role in earthquake 165, 167
Erhai Lake tectonic setting 199–201
Exponential law and acoustic emission 121–123

Failure mechanisms 47–49, 53
  ductile 87
  shear 87
Fault analysis
  effect of earthquakes 216–218
  role in crustal stretching 172–173
  stress field development 215–216
Fault evolution systems 207
  catastrophe theory 210–211
  dissipative structure 207–209
  synergetics 209–210
Fault gouge
  dating 27–31
    method 18
    results 18–23
    sliding faults 30
    thrust faults 30–31
  friction properties
    applications to San Andreas Fault 8–9
    granite 4–7
    illite 2–4
    modelling behaviour 7–8
    quartz 4–7
Fault movement, stick-slip *v.* stable slide 1, 33–34, 35, 36, 37
Fault plane solutions 221–223
Fault zone micromineral studies 12–15

Fen-wei rift 147
Focal character, effect on acoustic emission of 125
Focal mechanisms and stress field 221–222
Folds, sheath 39–41
Foreshock distribution 68
Fractal distribution with depth
  method of study 201–204
  results 204–205
  results discussed 205–206
Fracture energy
  factors affecting
    mathematical modelling 100–101
    method 101–102
    results
      pressure effects 103–105, 106–108
      temperature effects 105
Fracture system analysis
  conjugate fracture structures 151–152
  en-echelon fracture structures 152–153
  fracture criterion 149–150
  λ-type fracture structures 154–155
  vortex fracture structures 155–157
Friction studies on faults 34–37
  applications to San Andreas Fault 8–9
  gouge effects
    granite 4–7
    illite 2–4
    quartz 4–7
  modelling behaviour 7–8

Gas emission and rock failure 85–87
Geosyncline formation 143–144
Geothermal flow and orogenesis 147–143
Glass in brittle-ductile deformation 42–43
Graben amplitude 171
Granite gouge 4–7
Gravity and orogenesis 147–148

Handan fault 164
Heat loss and deformation 143
Hengshui Fault 173
Horst amplitude 171
Huanghua Depression 170, 176
Hydrogen sulphide emission and rock failure 89

Illite in fault gouge 2–4
  crystallinity 26, 28
  dating 27
  isotopic composition 26–27
  polymorph effects 17, 18–20, 23
Impurities, effect on acoustic emission of 124–125
Induced polarization *see* polarization
Italy, tectonic setting of 183–184

Jiangsu Province stress measures 192
Jiyang Depression 170
Jizhong Depression 170

K/Ar dating
  method 18
  results 20
    gouge measurements 27–32
Kangding fault 131, 132
Kun-Qi-Qin tectonic blocks 219–220

Linear fracture structures 151
Lithology, effect on acoustic emission of 123–124
Lotus-form structures 157
Luhuo fault 131, 132

m-values and fracture 71
Magma evolution and orogenesis 143–144
Methane emission and rock failure 87–89
Microcracking and stress 113, 121–122
Moho surface contours 145–146
Mylonite mineral studies 13

Necking, crustal 174–175
Nishan dome 147
Nitrogen emission and rock failure 89
Nonequilibrium statistic theory 207–209
North China Plain 170
  crustal instability 175–176
  depth effects on deformation 173–175
  stretching features 170–173
  tectonic setting 219–220, 225–226

Orogenesis, causes of 143–144
Oxygen emission and rock failure 89

P-wave travel time 94
Plastic destruction and triaxial stress 113
Plate tectonics
  mechanisms evaluated 146
  setting for North China 225–226
Polarization, induced
  accuracy problems 79–80
  measurement instruments 77–78
  measurement methods 79
  results 80–83
  use in earthquake prediction 83–84
Potassium/argon dating *see* K/Ar
Pressure effects on fracture energy 103–105, 106–108

Q-value measurement 93–94, 96
Qianning fault 131, 132
Quartz gouge 4–7
Quartzite deformation behaviour 46–47
  frictional strength 49
  plastic component and instability modes 49–51
  strength criteria 48–49
  ultimate strength 48–49

Radiate-concentric structures 157
Radon emission 85
Rb/Sr dating
  method 18
  results 21–23
Red River Fault Zone 199–201
Relatively stable zone
  defined 160
  role in earthquake 166, 167
Reticulate fracture structures 151
Rifting amplitude 171
Rubidium/strontium dating *see* Rb/Sr
Ruhr Sandstone
  fracture energy 103–104, 105
  mechanical properties 102–103

San Andreas Fault sliding behaviour 8–9
Seismicity studies of Xianshuihe fault
  characteristics 134–136
  coordination of deformation 140–141
  depth effect 138
  geometric link 136–138

length effect 138–140
Seismo-acoustic emission (SAE) *see* acoustic emission
Selaha fault 131, 132
Self-organization and fault evolution 211–212
Shandong marble 87
Shear faults, effects of 143
Shear fracture 49
Shear rupture
  mechanism 56–59
  stress conditions 55–56
Sheath folds 39–41
Shentangyu zone, tectonics of 40
Sliding fault dating technique 30
Spectral amplitude variation 94–96
Splay structures 154
Stick-slip motion 1, 33–34, 35, 36, 37, 49
  b-value effects 73
Strain variation with depth 173
Stress analysis 221, 223–224
  effects on acoustic emission 125
  post-seismic evolution 64–68
  tectonic transport effects 186–188
  variation with depth
    average horizontal principle 194–195
    horizontal principle 191–193
    maximum and minimum values compared 196–198
    shear values 193–194
    vertical and horizontal values compared 195
Stress–strain relationships 113–114
Stretching features 170–173
Subsidence, modelling of 184–186
Synergetics and fault evolution 209–210

Taihangshan Mountains 171
Tan-Lu fault zone dating 17
Tangshan stress measures 192
Tanlu fault 146–147
Tectonic transport and stress fields 186–188
Temperature effects on fracture energy 105
Tensile fractures 59–60
Tensile structures analysed 146–147
Thrust fault dating technique 30–31
Tremolite in sheath folds 41
Triaxial compression tests
  method 92–93
  principle 91–92
  results 93–95
Triaxial stress tests
  method 112–113, 114–115, 118–119
  results 113–114, 115–118, 119–120
Turbine structures 155–156

Uplift amplitude 171

Vertical crustal motion, modelling of 184–186

Wavelength effects in subsidence 171

X-type fracture structures 151
Xi-type fracture structures 152
Xiaguan well fracture study
  method 201–204
  results 204–205
  results discussed 205–206
Xialiao Depression 170, 173
Xianshuihe fault
  fractal geometry 133–134
  segmentation 131–132
  seismicity 134–136
    conditions and depth 138
    coordination of deformation 140–141
    length effects 138–140
    relation to geometry 136–138
Xingtai earthquake 164
Xinyi stress measures 192

Yangtze tectonic blocks 219–220
Yanshan Mountains 171
Yantan HEP Station earthquake hazards 166–168
Yi-Shu fault zone dating 17
Yixian stress measures 191–192
Yunmeng Mountains fault zone 25
Yunnan marble 85, 86
Yunnan Province 199–201

Zheduotang fault 131, 132
Zhonggu fault 131, 132